AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE	OF PAGES
N/A	1	46

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. *(If applicable)*
0009	JUL. 31, 2002	N/A	SPEC. NO. 1266

6. ISSUED BY CODE

DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT,LOS ANGELES
LOS ANGELES, CALIFORNIA 90053-2325

7. ADMINISTERED BY *(If other than Item 6)* CODE

DISTRICT ENGINEER
U.S. ARMY ENGINEER DISTRICT,LOS ANGELES
911 WILSHIRE BLVD
LOS ANGLES, CALIFORNIA 90053-2325

8. NAME AND ADDRESS OF CONTRACTOR *(No., street, county, State and ZIP Code)*

CODE FACILITY CODE

(√) X

9A. AMENDMENT OF SOLICITATION NO.
DACA05-02-B-0002

9B. DATED *(SEE ITEM 11)*
N/A

10A. MODIFICATION OF CONTRACTS/ORDER NO.
N/A

10B. DATED *(SEE ITEM 13)*
N/A

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

☒ The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers ☐ is extended, ☒ is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods:

(a) By completing Items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of this amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA *(If required)*
N/A

NOTE: ITEM 13 BELOW IS N/A.

13. THIS ITEM APPLIES ONLY TO MODIFICATIONS OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(√)	
	A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: *(Specify authority)* THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A. N/A
	B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES *(such as changes in paying office, appropriation date, etc.)* SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103(b).
	C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:
	D. OTHER *(Specify type of modification and authority)* N/A

E. IMPORTANT: Contractor ☐ is not, ☐ is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION *(Organized by UCF section headings, including solicitation/contract subject matter where feasible.)*

557th DS Maintenance Shop
Fort Irwin, CA

1 Encl.

1. Revised Pages: Front End (Page 167 thru 186) General Wage Decision, Section 15400

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A. NAME AND TITLE OF SIGNER *(Type or print)*		16A. NAME AND TITLE OF CONTRACTING OFFICER *(Type or print)*	
15B. CONTRACTOR/OFFEROR *(Signature of person authorized to sign)*	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY *(Signature of Contracting Officer)*	16C. DATE SIGNED

General Decision Number CA020037

General Decision Number CA020037 Superseded General Decision No. CA010037
State: California
Construction Type:
BUILDING
DREDGING
HEAVY
HIGHWAY
County(ies):
SAN BERNARDINO
BUILDING CONSTRUCTION PROJECTS; DREDGING PROJECTS (does not include hopper dredge work); HEAVY CONSTRUCTION PROJECTS (does not include water well drilling); HIGHWAY CONSTRUCTION PROJECTS

Modification Number	Publication Date
0	03/01/2002
1	03/08/2002
2	03/22/2002
3	03/29/2002
4	05/10/2002
5	06/07/2002
6	07/05/2002
7	07/19/2002

COUNTY(ies):
SAN BERNARDINO

ASBE0005B 09/24/2001

	Rates	Fringes
Includes the application of all insulating materials, protective coverings, coatings, and finishings to all types of mechanical systems		
INSULATOR/ASBESTOS WORKER	30.23	7.66

ASBE0005Z 10/19/1998

	Rates	Fringes
ASBESTOS REMOVAL/ HAZARDOUS MATERIAL HANDLER Includes preparation, wetting, stripping, removal, scrapping, vacuuming, bagging and disposing oa all insuling materials from mechanical systems, whether they contain asbestos or not	19.70	4.87

BOIL0092F 10/01/2001

	Rates	Fringes
BOILERMAKER	31.01	11.95

BRCA0004U 05/01/2002

	Rates	Fringes
BRICKLAYER; MARBLE MASON	28.22	6.20

BRCA0018G 06/01/2002

	Rates	Fringes

TILE LAYERS	26.50	7.45
TILE FINISHERS	16.65	2.91
MARBLE FINISHER	19.90	3.56

BRCA0018K 12/01/2000

	Rates	Fringes
TERRAZZO WORKER	26.78	5.34
TERRAZZO FINISHER	20.53	5.34

CARP0002B 07/01/2001

	Rates	Fringes
DIVERS:		
Diver, wet	486.08 per day	5.61
Diver, stand-by	243.04 per day	5.61
Diver tender	235.04 per day	5.61

CARP0002Q 07/01/2001

	Rates	Fringes
Work on wood framed construction of single family residences, apartments or condominiums under 4 stories		
DRYWALL INSTALLERS	19.00	5.18
DRYWALL STOCKER/SCRAPPER	10.00	4.42
All other work		
DRYWALL INSTALLERS	27.75	6.43
DRYWALL STOCKER/SCRAPPER	10.00	4.42

CARP0003E 07/01/1998

	Rates	Fringes
CARPENTERS:		
Work on wood frame, tilt up or concrete block construction including but not limited to: shopping centers, stores, office buildings, fast food establishments, also including curb, gutter and sidewalks where the total cost of the project does not exceed seven and one-half million ($7,500,000.00) dollars.		
CARPENTERS:		
Carpenter, cabinet installer, insulation installer, floor worker and acoustical installer	22.75	6.28
Shingler	22.88	6.28
Roof loader of shingles	15.42	6.28
Saw filer	22.83	6.28
Table power saw operator	22.85	6.28
Pneumatic nailer or power stapler	23.00	6.28
Fence builder	20.30	6.28
Millwright	23.25	6.28
Pile driver; Derrick barge; Bridge or dock carpenter; Cable splicer; Heavy framer; Rockslinger	22.88	6.28
Head rockslinger	22.98	6.28
Rock barge or scow	22.78	6.28
Scaffold builder	17.00	6.28
All other work:		

CARPENTERS:		
Carpenter, cabinet installer, insulation installer, floor worker and acoustical installer	24.75	6.28
Shingler	24.88	6.28
Roof loader of shingles	17.42	6.28
Saw filer	24.83	6.28
Table power saw operator	24.85	6.28
Pneumatic nailer or power stapler	25.00	6.28
Fence builder	22.30	6.28
Millwright	25.25	6.28
Pile driver; Derrick barge; Bridge or dock carpenter; Cable splicer; Heavy framer; Rockslinger	24.88	6.28
Head rockslinger	24.98	6.28
Rock barge or scow	24.78	6.28
Scaffold builder	19.00	6.28

FOOTNOTE:
Work of forming in the construction of open cut sewers or storm drains, on operations in which horizontal lagging is used in conjunction with steel H-Beams driven or placed in pre-drilled holes, for that portion of a lagged trench against which concrete is poured, namely, as a substitute for back forms (which work is performed by piledrivers): $0.13 per hour additional.

CARP0003H 07/01/2001

	Rates	Fringes
MODULAR FURNITURE INSTALLER	14.99	5.805
LOW WALL MODULAR TECHNICIAN	18.22	5.805
FULL WALL TECHNICIAN	21.47	5.805

ELEC0011C 12/01/2001

	Rates	Fringes
COMMUNICATIONS AND SYSTEMS WORK:		
Installer	22.13	3% + 4.40
Technician	23.93	3% + 4.40

SCOPE OF WORK:
Installation, testing, service and maintenance of systems utilizing the transmission and/or transference of voice, sound, vision and digital for commercial, educational, security and entertainment purposes for the following: TV monitoring and surveillance, background-foreground music, intercom and telephone interconnect, inventory control systems, microwave transmission, multi-media, multiplex, nurse call systems, radio page, school intercom and sound, burglar alarms, fire alarm (see last paragraph below) and low voltage master clock systems in commercial buildings.
Communication Systems that transmit or receive information and/or control systems that are intrinsic to the above listed systems; inclusion or exclusion of terminations and testings of conductors determined by their function; excluding all other data systems or multiple systems which include control function or power supply; excluding installation of raceway systems, conduit systems, line voltage work, and energy management systems.

Does not cover work performed at China Lake Naval Ordnance Test Station.
Fire alarm work shall be performed at the current inside wireman total cost package.

ELEC0477B 06/04/2002

	Rates	Fringes
Electrician	28.25	3%+10.75
Cable splicer	27.75	3%+10.75
Electrician, tunnel work	33.37	3%+10.75

ZONE PAY:
Zone A - 80 road miles from Post Office, 455 Orange Show Lane, San Bernardino, will be a free zone for all contractors
Zone B - Any work performed outside Zone A's 80 road miles, shall add $8.00 per hour to the current wage scale.

ELEC1245A 06/01/2002

	Rates	Fringes
LINE CONSTRUCTION		
Lineman; Cable splicer	33.16	4.5%+7.08
Equipment specialist (operates crawler tractors, commercial motor vehicles, backhoes, trenchers, cranes (50 tons and below), and overhead and underground distribution line equipment)	28.19	4.5%+6.80
Groundman	21.56	4.5%+6.80
Powderman	31.51	4.5%+6.84

ELEV0018A 09/15/2001

	Rates	Fringes
ELEVATOR MECHANIC	33.695	7.455

FOOTNOTE:
Vacation Pay: 8% with 5 or more years of service, 6% for 6 months to 5 years service. Paid Holidays: New Years Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Friday after, and Christmas Day.

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* ENGI0012C 07/01/2002

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
GROUP 1	27.85	11.85
GROUP 2	28.63	11.85
GROUP 3	28.92	11.85
GROUP 4	30.21	11.85
GROUP 5	30.43	11.85
GROUP 6	30.54	11.85
GROUP 7	30.66	11.85
GROUP 8	30.83	11.85
GROUP 9	30.93	11.85
GROUP 10	30.96	11.85
GROUP 11	31.04	11.85
GROUP 12	31.16	11.85
GROUP 13	31.33	11.85

GROUP 14	31.43	11.85
GROUP 15	31.54	11.85
GROUP 16	31.66	11.85
GROUP 17	31.83	11.85
GROUP 18	31.93	11.85
GROUP 19	32.04	11.85
GROUP 20	32.16	11.85
GROUP 21	32.33	11.85
CRANES, PILEDRIVING & HOISTING EQUIPMENT:		
GROUP 1	29.00	11.85
GROUP 2	29.78	11.85
GROUP 3	30.07	11.85
GROUP 4	30.21	11.85
GROUP 5	30.43	11.35
GROUP 6	30.54	11.85
GROUP 7	30.66	11.35
GROUP 8	30.83	11.85
GROUP 9	31.00	11.85
GROUP 10	32.00	11.85
GROUP 11	33.00	11.85
GROUP 12	34.00	11.85
GROUP 13	35.00	11.80
TUNNEL WORK:		
GROUP 1	30.28	11.85
GROUP 2	30.57	11.85
GROUP 3	30.71	11.85
GROUP 4	30.93	11.85
GROUP 5	31.04	11.85
GROUP 6	31.16	11.85
GROUP 7	31.46	11.85

FOOTNOTES: Workers required to suit up and work in a hazardous material environment: $1.00 per hour additional.

Combination mixer and compressor operator on gunite work shall be classified as a concrete mobile mixer operator.

POWER EQUIPMENT OPERATORS CLASSIFICATIONS

GROUP 1: Bargeman; Brakeman; Compressor operator; Ditch Witch, with seat or similar type equipment; Elevator operator-inside; Engineer Oiler; Forklift operator (includes loed, lull or similar types under 5 tons; Generator operator; Generator, pump or compressor plant operator; Pump operator; Signalman; Switchman

GROUP 2: Asphalt-rubber plant operator (nurse tank operator); Concrete mixer operator-skip type; Conveyor operator; Fireman; Forklift operator (includes loed, lull or similar types over 5 tons; Hydrostatic pump operator; oiler crusher (asphalt or concrete plant); Petromat laydown machine; PJU side dum jack; Screening and conveyor machine oeprator (or similar types); Skiploader (wheel type up to 3/4 yd. without attachment); Tar pot fireman; Temporary heating plant operator; Trenching machine oiler

GROUP 3: Asphalt-rubber blend operator; Bobcat or similar type (side steer); Equipment greaser (rack); Ford Ferguson (with dragtype attachments); Helicopter radioman (ground); Stationary pipe wrapping and cleaning machine operator

GROUP 4: Asphalt plant fireman; Backhoe operator (mini-max or similar type); Boring machine operator; Boxman or mixerman (asphalt or concrete); Chip spreading machine operator; Concrete cleaning decontamination machine operator; Concrete Pump Operator

(small portable); Drilling machine operator, small auger types (Texoma super economatic or similar types - Hughes 100 or 200 or similar types - drilling depth of 30' maximum); Equipment greaser (grease truck); Guard rail post driver operator; Highline cableway signalman; Horizontal Directional Drilling Machine; Hydra-hammer-aero stomper; Micro Tunneling (above ground tunnel); Power concrete curing machine operator; Power concrete saw operator; Power-driven jumbo form setter operator; Power sweeper operator; Roller operator (compacting); Screed operator (asphalt or concrete); Trenching machine operator (up to 6 ft.); Vacuum or much truck

GROUP 5: Articulating material hauler; Asphalt plant engineer; Batch plant operator; Bit sharpener; Concrete joint machine operator (canal and similar type); Concrete planer operator; Dandy digger; Deck engine operator; Derrickman (oilfield type); Drilling machine operator, bucket or auger types (Calweld 100 bucket or similar types - Watson 1000 auger or similar types - Texoma 330, 500 or 600 auger or similar types - drilling depth of 45' maximum); Drilling machine operator (including water wells); Hydrographic seeder machine operator (straw, pulp or seed), Jackson track maintainer, or similar type; Kalamazoo Switch tamper, or similar type; Machine tool operator; Maginnis internal full slab vibrator, Mechanical berm, curb or gutter(concrete or asphalt); Mechanical finisher operator (concrete, Clary-Johnson-Bidwell or similar); Micro tunnel system (below ground); Pavement breaker operator (truck mounted); Road oil mixing machine operator; Roller operator (asphalt or finish), rubber-tired earth moving equipment (single engine, up to and including 25 yds. struck); Self-propelled tar pipelining machine operator; Skiploader operator (crawler and wheel type, over 3/4 yd. and up to and including 1-1/2 yds.); Slip form pump operator (power driven hydraulic lifting device for concrete forms); Tractor operator-bulldozer, tamper-scraper (single engine, up to 100 h.p. flywheel and similar types, up to and including D-5 and similar types); Tugger hoist operator (1 drum); Ultra high pressure waterjet cutting tool system operator; Vacuum blasting machine operator

GROUP 6: Asphalt or concrete spreading operator (tamping or finishing); Asphalt paving machine operator (Barber Greene or similar type); Asphalt-rubber distribution operator; Backhoe operator (up to and including 3/4 yd.), small ford, Case or similar; Cast-in-place pipe laying machine operator; Combination mixer and compressor operator (gunite work); Compactor operator (self-propelled); Concrete mixer operator (paving); Crushing plant operator; Drill Doctor; Drilling machine operator, Bucket or auger types (Calweld 150 bucket or similar types - Watson 1500, 2000 2500 auger or similar types - Texoma 700, 800 auger or similar types - drilling depth of 60' maximum); Elevating grader operator; Grade checker; Gradall operator; Grouting machine operator; Heavy-duty repairman; Heavy equipment robotics operator; Kalamazoo balliste regulator or similar type; Kolman belt loader and similar type; Le Tourneau blob compactor or similar type; Loader operator (Athey, Euclid, Sierra and similar types); Ozzie padder or similar types; P.C. slot saw; Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pumpcrete gun operator; Rotary drill operator (excluding caisson type); Rubber-tired earth-moving equipment operator

(single engine, caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator (multiple engine up to and including 25 yds. struck); Rubber-tired scraper operator (self-loading paddle wheel type-John Deere, 1040 and similar single unit); Self-propelled curb and gutter machine operator; Shuttle buggy; Skiploader operator (crawler and wheel type over 1-1/2 yds. up to and including 6-1/2 yds.); Soil remediation plant operator; Surface heaters and planer operator; Tractor compressor drill combination operator; Tractor operator (any type larger than D-5 - 100 flywheel h.p. and over, or similar-bulldozer, tamper, scraper and push tractor single engine); Tractor operator (boom attachments), Traveling pipe wrapping, cleaning and bendng machine operator; Trenching machine operator (over 6 ft. depth capacity, manufacturer's rating); Ultra high pressure waterjet cutting tool system mechanic; Water pull (compaction) operator

GROUP 7: Drilling machine operator, Bucket or auger types (Calweld 200 B bucket or similar types-Watson 3000 or 5000 auger or similar types-Texoma 900 auger or similar types-drilling depth of 105' maximum); Dual drum mixer, dynamic compactor LDC350 (or similar types); Monorail locomotive operator (diesel, gas or electric); Motor patrol-blade operator (single engine); Multiple engine tractor operator (Euclid and similar type-except Quad 9 cat.); Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Pneumatic pipe ramming tool and similar types; Prestressed wrapping machine operator; Rubber-tired earth-moving equipment operator (single engine, over 50 yds. struck); Rubber tired earth moving equipment operator (multiple engine, Euclid, caterpillar and similar over 25 yds. and up to 50 yds. struck), Tower crane repairman; Tractor loader operator (crawler and wheel type over 6-1/2 yds.); Woods mixer operator (and similar Pugmill equipment)

GROUP 8: Auto grader operator; Automatic slip form operator; Drilling machine operator, bucket or auger types (Calweld, auger 200 CA or similar types - Watson, auger 6000 or similar types - Hughes Super Duty, auger 200 or similar types - drilling depth of 175' maximum); Hoe ram or similar with compressor; Mass excavator operator less tha 750 cu. yards; Mechanical finishing machine operator; Mobile form traveler operator; Motor patrol operator (multi-engine); Pipe mobile machine operator; Rubber-tired earth-moving equipment operator (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck); Rubber-tired self-loading scraper operator (paddle-wheel-auger type self-loading - two (2) or more units)

GROUP 9: Rubber-tired earth-moving equipment operator operating equipment with push-pull system (single engine, up to and including 25 yds. struck)

GROUP 10: Canal liner operator; Canal trimmer operator; Remote-control earth-moving equipment operator (operating a second piece of equipment: $1.00 per hour additional); Wheel excavator operator (over 750 cu. yds.)

GROUP 11: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds.

struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine-up to and including 25 yds. struck)
GROUP 12: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)
GROUP 13: Rubber-tired earth-moving equipment operator, operating equipment with push-pull system (multiple engine, Euclid, Caterpillar and similar, over 50 cu. yds. struck); Tandem tractor operator (operating crawler type tractors in tandem - Quad 9 and similar type)
GROUP 14: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, up to and including 25 yds. struck)
GROUP 15: Rotex concrete belt operator (or similar types); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds.and up to and including 50 cu. yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, up to and including 25 yds. struck)
GROUP 16: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps, and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)
GROUP 17: Rubber-tired earth-moving equipment operator, operating in tandem (scrapers, belly dumps and similar types in any combination, excluding compaction units - multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)
GROUP 18: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, up to and including 25 yds. struck)
GROUP 19: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, Caterpillar, Euclid, Athey Wagon and similar types with any and all attachments over 25 yds. and up to and including 50 yds. struck); Rubber-tired earth-moving equipment operator, operating with the tandem push-pull system (multiple engine, up to and including 25 yds. struck)
GROUP 20: Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (single engine, over 50 yds. struck); Rubber-tired earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar, over 25 yds. and up to 50 yds. struck)
GROUP 21: Concrete pump operator-truck mounted; Rubber-tired

earth-moving equipment operator, operating equipment with the tandem push-pull system (multiple engine, Euclid, Caterpillar and similar type, over 50 cu. yds. struck)
CRANES, PILEDRIVING AND HOISTING EQUIPMENT CLASSIFICATIONS
GROUP 1: Engineer oiler; Fork lift operator (includes loed, lull or similar types)
GROUP 2: Truck crane oiler
GROUP 3: A-frame or winch truck operator; Ross carrier operator (jobsite)
GROUP 4: Bridge-type unloader and turntable operator; Helicopter hoist operator
GROUP 5: Hydraulic boom truck; Stinger crane (Austin-Western or similar type); Tugger hoist operator (1 drum)
GROUP 6: Bridge crane operator; Cretor crane operator; Hoist operator (Chicago boom and similar type); Lift mobile operator; Lift slab machine operator (Vagtborg and similar types); Material hoist and/or manlift operator; Polar gantry crane operator; Self Climbing scaffold (or similar type); Shovel, backhoe, dragline, clamshell operator (over 3/4 yd. and up to 5 cu. yds. mrc); Tugger hoist operator
GROUP 7: Pedestal crane operator; Shovel, backhoe, dragline, clamshell operator (over 5 cu. yds. mrc); Tower crane repair; Tugger hoist operator (3 drum)
GROUP 8: Crane operator (up to and including 25 ton capacity); Crawler transporter operator; Derrick barge operator (up to and including 25 ton capacity); Hoist operator, stiff legs, Guy derrick or similar type (up to and including 25 ton capacity); Shovel, backhoe, dragline, clamshell operator (over 7 cu. yds., M.R.C.)
GROUP 9: Crane operator (over 25 tons and up to and including 50 tons mrc); Derrick barge operator (over 25 tons up to and including 50 tons mrc); Highline cableway operator; Hoist operator, stiff legs, Guy derrick or similar type (over 25 tons up to and including 50 tons mrc); K-crane operator; Polar crane operator; Self erecting tower crane operator maximum lifting capacity ten tons
GROUP 10: Crane operator (over 50 tons and up to and including 100 tons mrc); Derrick barge operator (over 50 tons up to and including 100 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 50 tons up to and including 100 tons mrc), Mobile tower crane operator (over 50 tons, up to and including 100 tons M.R.C.); Tower crane operator and tower gantry
GROUP 11: Crane operator (over 100 tons and up to and including 200 tons mrc); Derrick barge operator (over 100 tons up to and including 200 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 100 tons up to and including 200 tons mrc); Mobile tower crane operator (over 100 tons up to and including 200 tons mrc)
GROUP 12: Crane operator (over 200 tons up to and including 300 tons mrc); Derrick barge operator (over 200 tons up to and including 300 tons mrc); Hoist operator, stiff legs, Guy derrick or similar type (over 200 tons, up to and including 300 tons mrc); Mobile tower crane operator (over 200 tons, up to and including 300 tons mrc)
GROUP 13: Crane operator (over 300 tons); Derrick barge operator (over 300 tons); Helicopter pilot; Hoist operator, stiff legs, Guy derrick or similar type (over 300 tons); Mobile tower

crane operator (over 300 tons)
TUNNEL CLASSIFICATIONS
GROUP 1: Skiploader (wheel type up to 3/4 yd. without attachment)
GROUP 2: Power-driven jumbo form setter operator
GROUP 3: Dinkey locomotive or motorperson (up to and including 10 tons)
GROUP 4: Bit sharpener; Equipment greaser (grease truck); Slip form pump operator (power-driven hydraulic lifting device for concrete forms); Tugger hoist operator (1 drum); Tunnel locomotive operator (over 10 and up to and including 30 tons)
GROUP 5: Backhoe operator (up to and including 3/4 yd.); Small Ford, Case or similar; Drill doctor; Grouting machine operator; Heading shield operator; Heavy-duty repairperson; Loader operator (Athey, Euclid, Sierra and similar types); Mucking machine operator (1/4 yd., rubber-tired, rail or track type); Pneumatic concrete placing machine operator (Hackley-Presswell or similar type); Pneumatic heading shield (tunnel); Pumpcrete gun operator; Tractor compressor drill combination operator; Tugger hoist operator (2 drum); Tunnel locomotive operator (over 30 tons)
GROUP 6: Heavy Duty Repairman
GROUP 7: Tunnel mole boring machine operator

ENGI0012D 08/01/2001

	Rates	Fringes
POWER EQUIPMENT OPERATORS:		
DREDGING:		
Leverman	33.65	11.30
Dredge dozer	30.18	11.30
Deckmate	30.07	11.30
Winch operator (stern winch on dredge)	29.52	11.30
Fireman; deckhand and bargeman	28.98	11.30
Barge mate	29.59	11.30

IRON0001R 07/01/2002

	Rates	Fringes
IRONWORKERS:		
Fence erector	25.97	15.29
Ornamental, reinforcing and structural	26.86	15.29

FOOTNOTE: Work at China Lake Naval Test Station, Edwards Air Force Base, Fort Irwin Military Station, Fort Irwin Training Center-Goldstone, 29 Palms-Marine Corps, U.S. Marine Base-Barstow additional $3.00 per hour.
Work at Yermo Marine Corps Logistic Center additional $2.00 per hour.

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* LABO0001B 07/01/2002

	Rates	Fringes
BRICK TENDER	21.10	9.57

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* LABO0002H 07/01/2002

	Rates	Fringes
LABORERS:		
GROUP 1	20.10	9.98
GROUP 2	20.65	9.98

GROUP 3	21.20	9.98
GROUP 4	22.75	9.98
GROUP 5	23.10	9.98
TUNNEL LABORERS:		
GROUP 1	23.01	9.98
GROUP 2	23.33	9.98
GROUP 3	23.79	9.98
GROUP 4	24.48	9.98
GUNITE LABORERS:		
GROUP 1	22.84	12.73
GROUP 2	21.89	12.73
GROUP 3	18.35	12.73
HOUSEMOVERS (ONLY WHERE HOUSEMOVING IS INCIDENTAL TO A CONSTRUCTION CONTRACT):		
Housemover	15.50	8.38
Yard maintenance person	15.25	8.38

FOOTNOTE: GUNITE PREMIUM PAY:

Workers working from a Bosn'n's Chair or suspended from a rope or cable shall receive 40 cents per hour above the foregoing applicable classification rates.

Workers doing gunite and/or shotcrete work in a tunnel shall receive 35 cents per hour above the foregoing applicable classification rates, paid on a portal-to-portal basis.

Any work performed on, in or above any smoke stack, silo, storage elevator or similar type of structure, when such structure is in excess of 75'-0" above base level and which work must be performed in whole or in part more than 75'-0" above base level, that work performed above the 75'-0" level shall be compensated for at 35 cents per hour above the applicable classification wage rate.

LABORER CLASSIFICATIONS

GROUP 1: Cleaning and handling of panel forms; Concrete screeding for rough strike-off; Concrete, water curing; Demolition laborer, the cleaning of brick if performed by a worker performing any other phase of demolition work, and the cleaning of lumber; Fire watcher, limber, brush loader, piler and debris handler; Flag person; Gas, oil and/or water pipeline laborer; Laborer, asphalt-rubber material loader; Laborer, general or construction; Laborer, general clean-up; Laborer, landscaping; Laborer, jetting; Laborer, temporary water and air lines; Material hose operator (walls, slabs, floors and decks); Plugging, filling of shee bolt holes; Dry packing of concrete; Railroad maintenance, repair track person and road beds; Streetcar and railroad construction track laborers; Rigging and signaling; Scaler; Slip form raiser; Tar and mortar; Tool crib or tool house laborer; Traffic control by any method; Window cleaner; Wire mesh pulling - all concrete pouring operations

GROUP 2: Asphalt shoveler; Cement dumper (on 1 yd. or larger mixer and handling bulk cement); Cesspool digger and installer;

Chucktender; Chute handler, pouring concrete, the handling of the chute from readymix trucks, such as walls, slabs, decks, floors, foundation, footings, curbs, gutters and sidewalks; Concrete curer, impervious membrane and form oiler; Cutting torch operator (demolition); Fine grader, highways and street paving, airport, runways and similar type heavy construction; Gas, oil and/or water pipeline wrapper - pot tender and form person; Guinea chaser; Headerboard person - asphalt; Laborer, packing rod steel and pans; Membrane vapor barrier installer; Power broom sweeper (small); Riprap stonepaver, placing stone or wet sacked concrete; Roto scraper and tiller; Sandblaster (pot tender); Septic tank digger and installer(lead); Tank scaler and cleaner; Tree climber, faller, chain saw operator, Pittsburgh chipper and similar type brush shredder; Underground laborer, including caisson bellower

GROUP 3: Buggymobile person; Concrete cutting torch; Concrete pile cutter; Driller, jackhammer, 2-1/2 ft. drill steel or longer; Dri-pak-it machine; Gas, oil and/or water pipeline wrapper, 6-in. pipe and over, by any method, inside and out; High scaler (including drilling of same); Hydro seeder and similar type; Impact wrench multi-plate; Kettle person, pot person and workers applying asphalt, lay-kold, creosote, lime caustic and similar type materials ("applying" means applying, dipping, brushing or handling of such materials for pipe wrapping and waterproofing); Operator of pneumatic, gas, electric tools, vibrating machine, pavement breaker, air blasting, come-alongs, and similar mechanical tools not separately classified herein; Pipelayer's backup person, coating, grouting, making of joints, sealing, caulking, diapering and including rubber gasket joints, pointing and any and all other services; Rock slinger; Rotary scarifier or multiple head concrete chipping scarifier; Steel headerboard and guideline setter; Tamper, Barko, Wacker and similar type; Trenching machine, hand-propelled

GROUP 4: Asphalt raker, lute person, ironer, asphalt dump person, and asphalt spreader boxes (all types); Concrete core cutter (walls, floors or ceilings), grinder or sander; Concrete saw person, cutting walls or flat work, scoring old or new concrete; Cribber, shorer, lagging, sheeting and trench bracing, hand-guided lagging hammer; Head rock slinger; Laborer, asphalt-rubber distributor boot person; Laser beam in connection with laborers' work; Oversize concrete vibrator operator, 70 lbs. and over; Pipelayer performing all services in the laying and installation of pipe from the point of receiving pipe in the ditch until completion of operation, including any and all forms of tubular material, whether pipe, metallic or non-metallic, conduit and any other stationary type of tubular device used for the conveying of any substance or element, whether water, sewage,

solid gas, air, or other product whatsoever and without regard to the nature of material from which the tubular material is fabricated; No-joint pipe and stripping of same; Prefabricated manhole installer; Sandblaster (nozzle person), water blasting, Porta Shot-Blast
GROUP 5: Blaster powder, all work of loading holes, placing and blasting of all powder and explosives of whatever type, regardless of method used for such loading and placing; Driller: All power drills, excluding jackhammer, whether core, diamond, wagon, track, multiple unit, and any and all other types of mechanical drills without regard to the form of motive power; Toxic waste removal

TUNNEL LABORER CLASSIFICATIONS

GROUP 1: Batch plant laborer; Bull gang mucker, track person; Changehouse person; Concrete crew, including rodder and spreader; Dump person; Dump person (outside); Swamper (brake person and switch person on tunnel work); Tunnel materials handling person
GROUP 2: Chucktender, cabletender; Loading and unloading agitator cars; Nipper; Pot tender, using mastic or other materials (for example, but not by way of limitation, shotcrete, etc.); Vibrator person, jack hammer, pneumatic tools (except driller)
GROUP 3: Blaster, driller, powder person; Chemical grout jet person; Cherry picker person; Grout gun person; Grout mixer person; Grout pump person; Jackleg miner; Jumbo person; Kemper and other pneumatic concrete placer operator; Miner, tunnel (hand or machine); Nozzle person; Operating of troweling and/or grouting machines; Powder person (primer house); Primer person; Sandblaster; Shotcrete person; Steel form raiser and setter; Timber person, retimber person, wood or steel; Tunnel Concrete finisher
GROUP 4: Diamond driller; Sandblaster; Shaft and raise work

GUNITE LABORER CLASSIFICATIONS

GROUP 1: Nozzle person and rod person
GROUP 2: Gun person
GROUP 3: Rebound person

LABO0783D 08/01/2001

	Rates	Fringes
Fort Irwin, George Air Force Base,		
Marine Corps Air Station 29 Palms,		
Marine Corps Logistics Supply Base:		
PLASTERER TENDER	25.30	9.62
PLASTER CLEANUP LABORER	22.75	9.62
Remainder of San Bernardino County:		
PLASTERER TENDER	22.30	9.62
PLASTER CLEANUP LABORER	19.75	9.62

LABO0882B 01/01/2002

	Rates	Fringes
ASBESTOS REMOVAL LABORER	20.97	7.65

SCOPE OF WORK: Includes site mobilization, initial site cleanup, site preparation, removal of asbestos-containing material and toxic waste, encapsulation, enclosure and disposal of asbestos-containing materials and toxic waste by hand or with equipment or machinery; scaffolding, fabrication of temporary wooden barriers and assembly of decontamination stations.

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* LABO1184A 07/01/2002

	Rates	Fringes
LABORERS - STRIPING:		
GROUP 1	20.65	8.42
GROUP 2	21.50	8.42
GROUP 3	23.82	8.42
GROUP 4	26.02	8.42

LABORERS - STRIPING CLASSIFICATIONS

GROUP 1: Protective coating, pavement sealing, including repair and filling of cracks by any method on any surface in parking lots, game courts and playgrounds; carstops; operation of all related machinery and equipment; equipment repair technician

GROUP 2: Traffic surface abrasive blaster; pot tender - removal of all traffic lines and markings by any method (sandblasting, waterblasting, grinding, etc.) and preparation of surface for coatings. Traffic control person: controlling and directing traffic through both conventional and moving lane closures; operation of all related machinery and equipment

GROUP 3: Traffic delineating device applicator: Layout and application of pavement markers, delineating signs, rumble and traffic bars, adhesives, guide markers, other traffic delineating devices including traffic control. This category includes all traffic related surface preparation (sandblasting, waterblasting, grinding) as part of the application process. Traffic protective delineating system installer: removes, relocates, installs, permanently affixed roadside and parking delineation barricades, fencing, cable anchor, guard rail, reference signs, monument markers; operation of all related machinery and equipment; power broom sweeper

GROUP 4: Striper: layout and application of traffic stripes and markings; hot thermo plastic; tape traffic stripes and markings, including traffic control; operation of all related machinery and equipment

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PAIN0036A 07/01/2001

	Rates	Fringes

PAINTER (includes lead abatement):
Work on service stations and and car washes; Small new commercial work (defined as construction up to and including 3 stories in height, such as small shopping centers, small stores, small office buildings and small food establishments); Small new industrial work (defined as light metal buildings, small warehouses, small storage facilities and tilt-up buildings); Repaint work (defined as repaint of any structure with the exception of work involving the aerospace industry, breweries, commercial recreational facilities, hotels which operate commercial establishments as part of hotel service, and sports facilities); Tenant improvement work (defined as tenant improvement work not included in conjunction with the construction of the building, and all repainting of tenant improvement projects | 21.25 | 5.63
All other work | 24.52 | 5.63

PAIN0036H 10/01/2001

	Rates	Fringes
DRYWALL FINISHERS	25.33	7.93

PAIN0036R 06/01/2002

	Rates	Fringes
GLAZIERS	29.20	8.45

FOOTNOTE: Additional $1.25 per hour for work in a condo, from the third (3rd) floor and up
Additional $1.25 per hour for work on the outside of the building from a swing state or any suspended contrivance, from the ground up

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PAIN1247B 03/01/2002

	Rates	Fringes
SOFT FLOOR LAYER	25.95	6.25

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* PLAS0200H 08/01/2001

	Rates	Fringes
FORT IRWIN; GEORGE AIR FORCE BASE; MAARINE CORPS AIR STATION 29 PALM,; AND MARINE CORPS LOGISTICS SUPPLY BASE:		
PLASTERERS	29.77	6.76
REMAINDER OF COUNTY:		
PLASTERERS	26.77	6.76

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* PLAS0500B 07/01/2002

	Rates	Fringes
CEMENT MASON	23.05	11.56

PLUM0016B 07/01/2000

	Rates	Fringes
PLUMBER; STEAMFITTER:		
Work on strip malls, light commercial, tenant improvement and remodel work	22.95	8.90
Work on new additions and remodeling of bars, restaurants, stores and commercial buildings, not to exceed 5,000 sq. ft. of floor space	24.93	11.32
All other work:		
Fort Irwin Army Base, Marine Corps Logistic Base at Nebo, Marine Corps Logistic Base at Yermo and Twenty-Nine Palms Marine Base	29.28	11.87
George Air Force Base	28.03	11.87
Remainder of County	25.78	11.87
SEWER AND STORM DRAIN WORK	17.46	10.76

PLUM0345A 07/01/2001

	Rates	Fringes
LANDSCAPE & IRRIGATION FITTER	20.38	11.10

ROOF0036B 09/01/2001

	Rates	Fringes
ROOFER	24.77	5.40
Duties limited to the following: Roof removal of any type of roofing or		

roofing material; or spudding,
or sweeping; and/or clean-up;
and/or preload in, or in preparing
the roof for application of
roofing, damp and/or
waterproofing materials
PREPARER 16.24 1.00
FOOTNOTE: Pitch premium: Work on which employees are exposed to pitch fumes or required to handle pitch, pitch base or pitch impregnated products, or any material containing coal tar pitch, the entire roofing crew shall receive $1.75 per hour "pitch premium" pay.

SFCA0669I 04/01/1999

	Rates	Fringes
DOES NOT INCLUDE THE NORTHERN PART OF THE CITY OF CHINO, OR THE CITIES OF MONTCLAIR OR ONTARIO:		
SPRINKLER FITTER (FIRE)	23.00	6.40

SFCA0709D 09/01/2001

	Rates	Fringes
THE NORTHERN PART OF THE CITY OF CHINO, AND THE CITIES OF MONTCLAIR AND ONTARIO:		
SPRINKLER FITTER (FIRE)	31.58	10.95

SHEE0102G 02/01/2001

	Rates	Fringes
INDUSTRIAL Work on all air pollution control systems, noise abatement panels, blow pipe, air-veyor systems, dust collecting, baghouses, heating, air conditioning, and ventilating (other than creature comfort) and all other industrial work, including metal insulated ceilings		
SHEETMETAL WORKER	24.91	13.62

SHEE0102H 07/01/2001

	Rates	Fringes
COMMERCIAL: Work on all commercial HVAC for creature comfort and computers clean rooms, architectural metals, metal roofing and lagging, over insulation		
SHEET METAL WORKER	28.95	10.57

TEAM0011I 07/01/2002

	Rates	Fringes
EDWARDS AFB, FORT IRWIN, GEORGE AFB, MARINE CORPS LOGISTIC BASE AT NEBO & YERMO, TWENTY-NINE PALMS BASE		
TRUCK DRIVERS:		
GROUP 1	24.84	12.84
GROUP 2	24.99	12.84
GROUP 3	25.12	12.84
GROUP 4	25.31	12.84
GROUP 5	25.25	12.84
GROUP 6	25.37	12.84
GROUP 7	25.62	12.84
GROUP 8	25.87	12.84
GROUP 9	26.02	12.84
GROUP 10	26.37	12.84
GROUP 11	26.87	12.84
REMAINDER OF COUNTY:		
GROUP 1	21.84	12.84
GROUP 2	21.99	12.84
GROUP 3	22.12	12.84
GROUP 4	22.31	12.84
GROUP 5	22.25	12.84
GROUP 6	22.37	12.84
GROUP 7	22.62	12.84
GROUP 8	22.87	12.84
GROUP 9	23.02	12.84
GROUP 10	23.37	12.84
GROUP 11	23.87	12.84

TRUCK DRIVER CLASSIFICATIONS

GROUP 1: Truck driver

GROUP 2: Driver of vehicle or combination of vehicles - 2 axles; Traffic control pilot car excluding moving heavy equipment permit load; Truck-mounted broom

GROUP 3: Driver of vehicle or combination of vehicles - 3 axles; Boot person; Cement mason distribution truck; Fuel truck driver; Water truck - 2 axle; Dump truck, less than 16 yds. water level; Erosion control driver

GROUP 4: Driver of transit mix truck, under 3 yds.; Dumpcrete truck, less than 6-1/2 yds. water level

GROUP 5: Water truck, 3 or more axles; Truck greaser and tire person ($0.50 additional for tire person); Pipeline and utility working truck driver, including winch truck and plastic fusion, limited to pipeline and utility work; Slurry truck driver

GROUP 6: Transit mix truck, 3 yds. or more; Dumpcrete truck, 6-1/2 yds. water level and over; Vehicle or combination of vahicles - 4 or more axle; Oil spreader truck; Dump truck, 16 yds. to 25 yds. water level

GROUP 7: A Frame, Swedish crane or similar; Forklift driver; Ross carrier driver
GROUP 8: Dump truck, 25 yds. or more water level; Truck repair person; Water pull - single engine; Welder
GROUP 9: Truck repair person/welder; Low bed driver, 9 axles or over
GROUP 10: Dump truck - 50 yds. or more water level; Water pull - single engine with attachment
GROUP 11: Water pull - twin engine; Water pull - twin engine with attachments; Winch truck driver - $1.25 additional when operating winch or similar special attachments

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WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29 CFR 5.5(a)(1)(ii)).

In the listing above, the "SU" designation means that rates listed under that identifier do not reflect collectively bargained wage and fringe benefit rates. Other designations indicate unions whose rates have been determined to be prevailing.

WAGE DETERMINATION APPEALS PROCESS

1.) Has there been an initial decision in the matter? This can be:

* an existing published wage determination
* a survey underlying a wage determination
* a Wage and Hour Division letter setting forth a position on a wage determination matter
* a conformance (additional classification and rate) ruling

On survey related matters, initial contact, including requests for summaries of surveys, should be with the Wage and Hour Regional Office for the area in which the survey was conducted because those Regional Offices have responsibility for the Davis-Bacon survey program. If the response from this initial contact is not satisfactory, then the process described in 2.) and 3.) should be followed.

With regard to any other matter not yet ripe for the formal process described here, initial contact should be with the Branch of Construction Wage Determinations. Write to:

Branch of Construction Wage Determinations
Wage and Hour Division
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

2.) If the answer to the question in 1.) is yes, then an interested party (those affected by the action) can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Write to:

Wage and Hour Administrator
U.S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

The request should be accompanied by a full statement of the interested party's position and by any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3.) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U. S. Department of Labor
200 Constitution Avenue, N. W.
Washington, D. C. 20210

4.) All decisions by the Administrative Review Board are final.

END OF GENERAL DECISION

SECTION 15400F

WASH RACK EQUIPMENT

PART 1 GENERAL ***This specification and design drawings is not meant to specify a certain manufacturer and/or product. Products and design drawings equal to or that may exceed the specification and design drawings as shown shall be considered for acceptance. Any product and design submitted for consideration must meet the minimum requirements of the specification and drawings at no additional cost to the government.***

1.1 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referred to in the text by the basic designation only.

AMERICAN NATIONAL STANDARDS INSTITUTE (ANSI)

ANSI B16.18	(1984; R1994) Cast Cooper Alloy Solder Joint Pressure Fittings
ANSI C2	(1997) National Electrical Safety Code

AMERICAN SOCIETY OF MECHANICAL ENGINEERS (ASME)

ASME B16.11	(1996) Forged Fittings, Socket-Welding and Threaded
ASME/ANSI B16.22	(1995) Wrought Copper and Copper Alloy Solder Joint Pressure Fittings
ASME/ANSI B16.26	(1998) Cast Copper Alloy Fittings for Flared Copper Tubes

AMERICAN SOCIETY OF SANITARY ENGINEERING (ASSE)

ASSE 1019	(1993) Vacuum Breaker Wall Hydrants, Freeze Resistant Automatic Draining

AMERICAN SOCIETY FOR TESTING AND MATERIALS (ASTM)

ASTM A 36	(1996) Carbon Structural Steel
ASTM A 53	(1996) Pipe, Steel, Black and Hot-Dipped, Zinc-Coated Welded and Seamless
ASTM B 32	(1996) Solder Metal
ASTM B 42	(1996) Seamless Copper Pipe, Standard Sizes
ASTM B 88	(1996) Seamless Copper Water Tube

ASTM D 1785 (1994) Poly (Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80 and 120

ASTM F 441/F 441/M (1996; Rev. B) Chlorinated Poly Vinyl Chloride (CPVC) Plastic Pipe, Schedules 40 and 80

AMERICAN WATER WORKS ASSOCIATION

AWWA C651 (1992) Disinfecting Water Mains

AWWA C701 (1998) Cold-Water Meters - Turbine Type, For Customer Service

CODE OF FEDERAL REGULATIONS (CFR)

29 CFR 1910 (1999) Occupational Safety and Health Standards

FOUNDATION FOR CROSS-CONNECTION CONTROL AND HYDRAULIC RESEARCH (FCCCHR)

FCCCHR - USC List Of Approved Backflow Prevention Assemblies

INTERNATIONAL CODE COUNCIL (ICC)

ICC IPC (1995; Supp. 1996) International Plumbing Code

MANUFACTURERS STANDARIZATION SOCIETY OF THE VALVE AND FITTINGS INDUSTRY, INC. (MSS)

MSS SP - 58 (1993) Pipe Hangers and Supports - Materials, Design and Manufacture

MSS SP - 69 (1996) Pipe Hangers and Supports - Selection And Application

MSS SP - 80 (1997) Bronze Gate, Globe, Angle and Check Valves

NATIONAL ELECTRICAL MANUFACTUERS ASSOCIATION (NEMA)

NEMA ICS 1 (1993) Industrial Control and Systems Controllers, Contactors, and Overload Relays, Rated Not More Than 2000 Volts AC or 750 Volts DC

NEMA MG 1 (1993); Rev. 1-2) Motors and Generators

NATIONAL FIRE PROTECTION ASSOCIATION (NFPA)

NFPA 70 (1999) National Electrical Code

1.2 RELATED REQUIREMENTS

Section 15050, "Basic Mechanical Materials and Methods", applies to this section with the additions and modifications specified herein.

1.3 SYSTEM DESCRIPTION

Provide new plumbing systems, complete and ready for operation. Plumbing systems including manufacturer's products shall be in accordance with the required and advisory provisions of the ICC IPC. Plumbing systems include piping less than 5 feet outside of building wall and piping beyond 5 feet outside of building walls including connections to existing exterior distribution systems.

1.4 SUBMITTALS

Submit the following in accordance with Section 01330, "Submittal Procedures"

1.4.1 SD-02 Shop Drawings

1.1 [Enter Appropriate Subpart Title Here]a. Plan view of electrical system for vehicle wash system showing all electrical components

b. Schematic wiring diagram of complete electrical system for vehicle wash system

1.4.2 SD-03 Product Data

a. Drain Piping

b. Domestic Water Piping

c. Compressed Air Piping

d. High-Pressure Hot Water Wash Water Piping

e. Soap Distribution Piping

f. Miscellaneous Piping Materials

g. Portable Water Treatment/Recycling Wash

h. Remote Equipment Module (REM) System

i. Posted Equipment Layout & Instruction (Electrical & Plumbing)
Posted instructions & layout, at least 2 weeks prior to construction completion, including equipment layout, wiring and control diagrams, piping, valves and control sequences, and typed washrack operation instructions. The washrack operation instructions shall include preventative maintenance procedures, methods of checking the system for normal and safe operation, and procedures for safely starting and stopping the system. The posted instructions & diagram shall be framed under glass or laminated plastic and be posted where indicated by the Contracting Officer.

i. Portable Wash Pad System With Ramps

*For pumps, include certified pump test curves.

1.4.3 SD-06 Test Reports

a. Backflow Preventers Test Report

b. Disinfection of Potable Water Piping

1.4.4 SD-10 Operation and Maintenance Data

a. Special System - Portable High-Pressure Hot Water Wash and Wash Wastewater Management System to include Remote Equipment Module REM System

*Submit operation and maintenance data in accordance with Section 01781, "Operation and Maintenance Data".

1.5 QUALITY ASSURANCE

Plumbing systems including fixtures, equipment, materials, installation, and workmanship shall be in accordance with the Plumbing Code except as modified herein. In the Plumbing Code referred to herein, the advisory provisions shall be considered to be mandatory, as though the work "shall" had be substituted for the work "should" wherever it appears; reference to the "authority having jurisdiction", the Administrative Authority, the Plumbing Official, and the Design Engineer shall be interpreted to mean the Contracting Officer. Capacity of equipment shall be not less than that indicated.

Electrical systems, including fixtures, wiring, equipment, materials, installation and workmanship shall be in accordance with the NFPA 70 and ANSI C2, except where modified herein

All equipment and Workmanship provided under this Section of the specification shall be warranted for a period of twelve (12) months, beginning on the date of final acceptance by the Contracting Officer or their representative. Any repairs or replacement of equipment, including shipping, repair parts and labor, shall be the responsibility of the Contractor and will be performed in a timely manner, and in accordance with warranty.

PART 2 PRODUCTS

2.1 DRAIN PIIPING

2.1.1 Wash Wastewater Drain and Force Main Piping

Wash wastewater drain and force main pipe shall be PVC SDR 26 with appropriate PVC fittings.

2.1.2 Recycle Water Gravity Return Drain

(Products Continued)

Recycle water gravity return drain hose shall be black, EPDM blend with reinforcement. Reinforcement shall be two layers of heavy-duty textile fabric separated by a high tensile strength steel wire helix, all embedded in rubber.

2.2 DOMESTIC WATER PIPING

2.2.1 Buried Piping and Aboveground Piping

Buried piping shall be as specified in Section 02510, "Water Distribution", and above ground piping.

2.2.1.1 Copper Tubing

ASTM B 88, Type L or M for aboveground piping, with ANSI B16.18 or ASME/ANSI B16.22 solder joint fittings, or with ASME/ANSI B16.26 flared joint fittings. Provide ASTM B 42 copper pipe nipples with threaded end connections. Provide ASTM b 32, 95-5 tin-antimony solder, or provide Plumbing Code approved lead-free solder. Provide copper tubing for pipe sizes 4 inches or smaller.

2.2.2 Water Valves

Provide valves suitable for minimum of 125 psig. Valves shall have threaded end connections with a union on all but one side of the valve, or solder end connections for connections between bronze valves and copper tubing. Ball valves may be provided in lieu of gate valves. Provide blue finish on hand wheels for valves in cold domestic water piping.

2.2.2.1 Gate Valves

MSS SP-80, Class 125

2.2.2.2 Ball Valves

Full Port design, copper alloy. Valves shall have two-position lever handles.

2.2.2.3 Non-Freeze Wall Hydrant

ASSE 1019, cast bronze, with lock shield and removable hand wheel or one inch external thread inlet, 0.75 inch external hose thread outlet with automatic draining vacuum breaker. Hydrant shall be of sufficient length to extend through walls and place the valve seat inside the portable water treatment/recycle system containment enclosure. Bonnet and valve stem shall be removable from outside of the portable water treatment/recycle system containment enclosure.

2.2.3 Water Meters

AWWA C701 Turbine Type, with register reading in U.S. Gallons

(Products Continued)

2.2.4 Strainers

Strainers shall have blow off outlet with pipe nipple and gate valve and discharge pipe nipple. Strainer body shall be copper alloy or cast-iron. Provide stainless steel strainer element with perforations of 0.047 inch.

2.2.5 Pressure Gauges

Provide single style pressure gauge for water with 4.5-inch dial, brass, phenolic or aluminum case, with bronze bourdon tube. Provide scale range suitable for the intended scale so that normal pressure is near mid-range of scale. All gauges shall be mounted vertical and shall be a minimum of 0.5 % accuracy full scale. All gauges shall be liquid filled for dampening as necessary.

2.2.6 Dielectric Connections

Provide at connections between copper and ferrous metal piping materials. ASTM F 441/F 441/M, Schedule 80, CPVC threaded pipe and nipples, 4 inch minimum length may be provided for dielectric connections in pipe sizes 2 inches and smaller.

2.2.7 Valve Boxes

Valve Boxes shall be as specified in Section 02510, " Water Distribution".

2.2.8 Backflow Preventers

Reduced pressure principle type. Furnish proof that each make, model/design, and size of backflow preventer being furnished for the project is approved by and has a current " Certificate of Approval" from the FCCCHR-USC or local code. Listing of the particular make, model/design, and size in the current FCCCHE-USC or local code will be acceptable as the required proof.

2.3 COMPRESSED AIR PIPING

Compressed air piping shall be ASSTM A 53, seamless carbon steel, schedule 80, black, socket welded ASME b16.11, Class 3000 welded fittings, rated for 150 psig.

2.4 HIGH-PRESSURE WASH WATER PIPING

2.4.1 Piping and Fittings

High pressure wash water piping shall be ASTM A 53, Grade B, seamless carbon steel, schedule 80, black, ASME B16.11, Class 6000, socket welded fittings, rated for 4500 psig.

(Products Continued)

2.4.2 Protective Coating and Pipe Protection

Provide protective coatings for buried piping. Provide pipe with factory applied adhesive undercoat and continuously extruded plastic resin coating system; minimum thickness of plastic resin shall be 23 mils. Tape shall be elastomeric film backing of polyethylene or plasticized polyvinyl chlorine coated on one side with homogenous pressure sensitive waterproof adhesive. Contractor's operations shall be clean dry grease free, and primed before application of tape. Tape shall overlap pipe coating not less than 3 inches. Waterproof shrink sleeves may be provided in lieu of tape, and shall be heated by electric heating. Sleeves shall overlap pipe coating not less than 6 inches. Extruded coating and adhesive undercoat surfaces to be wrapped with tape. Primer shall be as recommended by tape manufacturer and approved by extruded coating manufacturer.

b. Damaged areas of extruded coating: Provide 20 mils nominal thickness tape over damaged areas. Residual material form coating shall be pressed into the break or trimmed off. Tape shall be applied spirally with one-third overlapped as tape is applied. A double wrap of one full width of tape shall be applied at right angles to the axis to seal each end of the spiral wrapping.

c. Fittings, Couplings, and Regular Surfaces: Provide 20 mils nominal thickness tape overlapped not less than one inch over damaged areas. Initially stretch and apply first layer of tape to conform to component's surface. Apply and press a second layer of tape over first layer of tape.

d. Flanges, valves and irregular uncoated surfaces: Proved cold-applied coal tar mastic painting system to a minimum dry film thickness of 30 mils.

2.5 SOAP DISTRIBUTION PIPING

Soap distribution piping shall be manufacturer's standard

2.6 MISCELLANEOUS PIPING MATERIALS

2.6.1 Pipe Hangers And Supports

Provide MSS SP-58 and MSS SP-69, Type 1 with adjustable type steel support rods, except as specified or indicated otherwise.

2.7 SPECIAL SYSTEM - PORTABLE HIGH-PRESSURE HOT WATER WASH/RINSE AND WASH WASTEWATER MANGEMENT SYSTEM

Provide complete Abrams tank washing and turbine engine cleaning equipment. This system shall include a ~~Multiblaster~~ high-pressure hot water washing system, a ~~Multiblaster~~ high volume de-mucking system, wash wastewater recycling pre-treatment system, filtration and polishing system, and Environmentally Controlled, self contained equipment enclosure. All components shall function as a complete system for corrosion control of military equipment to include; tanks, ground support vehicles and a variety of other heavy equipment.

(Special System Continued)

The system shall be of tactical design, stand-alone, self-contained, portable, and transportable in accordance with this specification. The system shall consist of all equipment and components required to include; high-pressure hot water wash equipment, high volume de-mucking equipment, turbine engine washing equipment, wastewater pre-treatment and wastewater filtration system for removal and treatment of solids, oils, other hydrocarbons~~, solvents, metals and chemicals~~. System shall include technology and equipment for biological control of odors, organics and contaminant accumulations.

The wash pad must be capable of assembly in the configuration outlined in the site drawing and designed to support a minimum vehicle weight as outlined in the specifications to follow. The wash pad is designed to collect all spent wash fluids and include all components for complete collection, containment and transport of wash wastewater fluids to adjacent wastewater treatment system.

High-pressure hot water wash equipment shall be capable of remote operation by inclusion of portable Remote Equipment Module(s) (REM). The Remote Equipment Module(s) (REM) shall be complete with remote soap/foam application system with adjustable air/soap mixture control.
The high-pressure hot water wash equipment, wash wastewater pre-treatment and wash wastewater filtration equipment shall be supplied as a system in a portable and transportable environmentally controlled equipment enclosure. All equipment except wash pad and Remote Equipment Module (REM) shall be ~~factory~~ mounted, plumbed and wired complete in the environmentally controlled equipment enclosure as a system. The system shall be of tactical design to include exterior power disconnect, field connections of water and drain, and tactical hub for connections of Remote Equipment Module(s) (REM), and wash pad plumbing.

The complete system shall be capable of collecting, containing, recycling 160 gallons per minute and pre-treating excess wastewater for discharge to sanitary sewer up to 50-gpm of wash pad wastewater and shall produce a treated effluent suitable for use as a recycled wash waster and/or discharge to an approved sanitary sewer system. ~~As a minimum, the treated recycle effluent shall meet the specified pollutant concentrations indicated based on the wash wastewater influent concentrations, as presented below. (Note*: Limitation values listed are typical examples only)~~

~~CONTAMINANT CONCENTRATIONS FOR WATER TREATMENT/RECYCLE SYSTEM~~

~~CONTAMINANT~~	~~INFLUENT~~	~~EFFLUENT~~	~~*LIMITATION (ppm)~~
~~BOD~~	~~500~~	~~5.0~~	~~250~~
~~COD~~	~~3,500~~	~~5.0~~	~~500~~
~~TDS~~	~~100~~	~~25~~	~~500~~
~~TSS~~	~~9,710~~	~~2.5~~	~~250~~
~~Ammonia~~	~~10~~	~~2.5~~	~~20~~
~~Phosphorous~~	~~10~~	~~2.5~~	~~NA~~

~~(Contaminant Concentrations Continued)~~

~~Alkalinity (CaCO3)~~	~~400~~	~~250~~	~~NA~~
~~Zinc~~	~~4.02~~	~~0.008~~	~~5.0~~
~~Chromium (Total)~~	~~0.15~~	~~0.002~~	~~2.0~~
~~Chromium (Trivalent)~~	~~0.15~~	~~0.002~~	~~NA~~
~~Chromium (Hexavalent)~~	~~0.025~~	~~0.0003~~	~~0.10~~
~~Nickel~~	~~0.15~~	~~0.006~~	~~2.0~~
~~Copper~~	~~0.62~~	~~0.002~~	~~2.0~~
~~Cobalt~~	~~0.15~~	~~NA~~	~~NA~~
~~Chloride~~	~~69~~	~~10~~	~~NA~~
~~Cadmium~~	~~3.87~~	~~0.08~~	~~0.20~~
~~Iron~~	~~25~~	~~1.0~~	~~4.0~~
~~Lead~~	~~0.50~~	~~0.01~~	~~0.10~~
~~Mercury~~	~~0.06~~	~~0.015~~	~~0.10~~
~~Selenium~~	~~0.15~~	~~0.04~~	~~0.10~~
~~Silver~~	~~0.15~~	~~0.007~~	~~0.10~~
~~Sodium~~	~~195.9~~	~~50~~	~~NA~~
~~Thalium~~	~~0.15~~	~~0.04~~	~~NA~~
~~Oil & Grease~~	~~365~~	~~7.0~~	~~100~~
~~Cyanide~~	~~0.30~~	~~0.20~~	~~1.0~~
~~Phenol~~	~~0.05~~	~~0.007~~	~~NA~~
~~Arsenic~~	~~0.15~~	~~0.04~~	~~1.0~~
~~Vanadium~~	~~0.15~~	~~0.04~~	~~NA~~
~~Molybdenum~~	~~0.15~~	~~0.09~~	~~NA~~
~~Aluminum~~	~~4.7~~	~~0.50~~	~~NA~~
~~Sulfide~~	~~5.0~~	~~0.10~~	~~3.0~~
~~Barium~~	~~3.0~~	~~0.10~~	~~2.0~~
~~Beryllium~~	~~0.15~~	~~0.05~~	~~NA~~
~~Boron~~	~~0.45~~	~~0.10~~	~~NA~~
~~Manganese~~	~~0.72~~	~~0.18~~	~~2.0~~
~~Potassium~~	~~8.1~~	~~2.0~~	~~NA~~
~~Gold~~	~~0.50~~	~~0.025~~	~~0.10~~
~~Fluorides~~	~~0.90~~	~~0.25~~	~~10~~
~~Antimony~~	~~0.15~~	~~0.04~~	~~0.18~~
~~Available Chlorine~~	~~NA~~	~~NA~~	~~0.50~~
~~PH~~	~~6.56~~	~~6.56~~	~~5.5 - 9.5~~

The high-pressure hot water wash equipment, wash wastewater pre-treatment, filtration and polishing equipment, portable wash pad system equipment and the environmentally controlled equipment enclosure for corrosion control of military equipment shall be factory-assembled and tested for proper operation and performance of all system components.

2.7.1 Environmentally Controlled Equipment Enclosure

2.7.1.1 General

Provide a portable, transportable, insulated, environmentally controlled equipment enclosure specially designed to contain, support and protect equipment used for high-pressure hot water washing, wastewater pre-treatment, wastewater filtration, associated equipment items and commodities. The environmentally controlled equipment enclosure shall be all steel construction and thermally insulated on all sides and ceiling with permanent

polyurethane foam insulation. The enclosure shall meet the requirements of this section and shall be provided with all specific equipment, internal wiring, piping and environmental controls fully installed.

The environmentally controlled equipment enclosure shall provide a weatherproof barrier for equipment and personnel protection. As such, the environmentally controlled equipment enclosure and equipment contained therein becomes a tactical designed system for corrosion control high-pressure hot water wash and wastewater treatment/recycling system. As a system, eliminates the need for facility modifications and allows relocation of the system with all components as desired or needed.

The environmentally controlled equipment enclosure shall be made with steel beam construction, and shall have permanent insulation, HVAC, plumbing, central drain system, secondary containment, internal power distribution, installed lighting and utility connections.

The environmentally controlled equipment enclosure shall meet the tactical design, performance, quality and material specification requirements of this section.

2.7.1.2 Applicable Federal and Military Specification Standards

While not limited to, the following Federal and Military specifications and standards are specifically incorporated herewith by reference to ensure compliance of the product with military operation requirements:

a. ASTM A 36
b. ASTM D 1785
c. MSS SP-69
d. NEMA ICS 1
e. NEMA MG 1

2.7.1.3 OSHA Requirements And Standards

OSHA requirements 29 CFR 1910 shall be complied with and OSHA Standards met or exceeded in the design and manufacture of this equipment. In addition, all installed equipment shall meet all ICCIPC, NFPA 70 and ANSI C2 requirements.

2.7.1.4 Physical Dimensions And Capacity

The environmentally controlled equipment enclosure shall be 40 feet long by 8 feet wide by 8 feet high and shall have an empty weight of approximately 15,500 pounds.

(Physical Dimensions Continued)

The environmentally controlled equipment enclosure shall be capable of containing 40,000 pounds of equipment, chemicals and stowage during transport without structural degradation or frame distortion of more than 1" from end to end. This criterion also ensures proper form and fit when the environmentally controlled equipment enclosure is installed on site.

2.7.1.5 Materials

The environmentally controlled equipment enclosure shall be manufactured of structural, stainless, galvanized steel and aluminum, insulated with a minimum of 3" polyurethane foam insulation on all sides and ceiling. Any exterior areas of the enclosure, which require paint, will be painted with exterior enamel in accordance with Section 15050, " Basic Mechanical Material and Methods". All repairs of reconditioned enclosure shall be painted with a finish coat of paint. Any exterior labeling or decal work shall be done professionally and shall not deteriorate beyond normal exposure expectations during the warranty period.

The environmentally controlled equipment enclosure shall be either new; or a previously used unit properly refurbished to insure that the said enclosure has the same level of environmental protection, structural integrity and insulating capability as an original "new" enclosure.

Interior of the enclosure shall be clean, free of rust, and without corrosion. Required penetrations through the enclosure roof, walls and/or floor shall be professionally sealed to prevent entry of water and insects or other nuisance pests. As required, the enclosure shall be painted a single color with uniform coverage across the exterior surface area.

2.7.1.6 Portability/Installation

The environmentally controlled equipment enclosure shall be capable of being transported on a standard semi truck trailer, lifted by forklift or ocean cargo handling equipment, or sling lifted by crane. Information shall be supplied to identify the "pick points" for lifting and hoisting to occur without damage to the enclosure. Relocation installation consists of lifting it into place and attaching utilities.

2.7.1.7 Access And Interface

Two full sized doors, each 4 feet wide x 8 feet high, shall be provided on one end of the environmentally controlled equipment enclosure as shown on the contract drawing. Doors will be equipped with swing hasp and latch for safe personnel access or to secure as needed. The environmentally controlled equipment enclosure shall sit flush on a concrete pad or other solid surface as shown on the drawings with no flashing, skirting or berm required. Sufficient space between the external bottom and internal flooring shall be provided to allow for floor drains and utility interfaces.

2.7.1.8 Secondary Containment System

The environmentally controlled equipment enclosure shall include a secondary containment to prevent any discharge from the enclosure's floor to the surrounding area. Containment system shall consist of extruded aluminum floors, one (1) cubic foot reinforced sump with sump pump ***or similar system***. The sump and aluminum floor shall make a waterproof seal. The sump pump shall be hard plumbed, and directed to the return line and controlled utilizing a ball valve. Any existing floor drains that would normally drain through the bottom of the enclosure shall be permanently sealed.

2.7.1.9 Electrical System

The environmentally controlled equipment enclosure shall be provided with an incoming service of 4- wire, 3-phase electrical power. A hand operated, fused power disconnect switch shall be provided on the outside wall of the enclosure. This device shall be capable of 100 percent over voltage control and meet the standards applicable to the installing facility. The environmentally controlled equipment enclosure and all associated equipment shall be grounded in accordance with NFPA 70, article 250.

All internal electrical systems shall be wired in place through the main power control box for supply at 4-wire, 3 phase power. An internal control panel shall be installed with fused master switches for isolation of each electrical device designed into the unit. Systems or equipment shall be capable of operation at normal voltages +/- 3 percent as required by the system or equipment.

Receptacles, lights, small motors and controls shall be supplied with 120-volt. Environmentally controlled equipment enclosure shall be provided with the necessary dry type transformer (s) with sufficient capacity to power the required 120-volt equipment. Duplex outlets shall be installed along the walls on the equipment side of the enclosure to provide power matching the requirements of the installed equipment. Overhead lighting shall be installed with a control switch located inside near the personnel entrance.

The electrical system for the portable water treatment/recycling vehicle wash system shall conform to specification Section 16402 "Interior Distribution System".

2.7.1.10 Environmental Controls

The environmentally controlled equipment enclosure shall support installed equipment operation with outdoor ambient temperatures ranging from -5 to 125 ° F and up to 6,000 feet above sea level. A HVAC system shall be provided and installed in one end of the environmentally controlled equipment enclosure. The HVAC system shall maintain automatically a desired temperature within the enclosure of between 40 and 90 °F under extreme outside ambient weather conditions. Under normal conditions, a nominal comfortable temperature range between 60 and 80 °F shall be maintainable.

This enclosure system shall protect personnel and the equipment, piping, tanks, etc., from damage due to freezing and/or excessive heat buildup (overheating motors, etc.). A thermostat shall be provided in a readily accessible location of the environmentally controlled equipment enclosure.

(Environmental Controls Continued)

The walls and ceilings shall be insulated with minimum 3" thick polyurethane, the floor and both ends, including doors, shall be insulated with minimum 3" thick polyurethane. Fresh air requirements for the enclosure shall be satisfied with an automatic ventilation mechanism.

2.7.1.11 Warning Light

The environmentally controlled equipment enclosure shall be provided with an automatic indicator/warning light such as a strobe or rotating beacon to notify personnel of required actions (such as backflushing the filtration system).

2.7.1.12 Control Panel

The environmentally controlled equipment enclosure shall have an internal control panel with fused master switches for isolation of each electrical device installed within the unit. This is in addition to the individual remote switches on each item of equipment installed.

2.7.1.13 Plumbing

All piping and fittings necessary to support the specified equipment to be installed in the environmentally controlled equipment enclosure shall be pre-installed and tested prior to shipment of the enclosure. Materials selected shall be non-corroding and meet or exceed ASME standards for the application and shall meet the specific requirements of the specifications.

There shall be a utility interface hub located at the front end of the environmentally controlled equipment enclosure to facilitate connection of utility potable water and sanitary sewer at the site. Site contractor shall stub site utilities within 36" of the utility hub location prior to system arrival. Supplier shall make final connections during system checkout and startup.

High pressure recycled wash water supply to the portable Remote Equipment Module (REM), wash wastewater force main, and recycle water gravity return drain shall be piped through the tactical hub on the side of the equipment enclosure to the portable wash pads.

The environmentally controlled equipment enclosure will contain an air compressor with all piping, wiring and controls. Compressed air piping and 24 volt wiring for the Remote Equipment Module (REM) will also be plumbed through the tactical hub.

2.7.1.14 Installed Equipment

The following equipment will be provided with the environmentally controlled equipment enclosure and is specified elsewhere in this section:

a. High-pressure hot water wash equipment

(Installed Equipment Continued)

b. High volume recycling and de-mucking equipment
c. Turbine engine washing system
d. Pre-filtration equipment for removal of solids from wash wastewater
e. Oil/water separator and active oil skimmer
f. ~~Hydrocarbon, metals, and particulate filtration and polishing systems with auto-backflushing~~***Particulate filtration and polishing systems with auto back flusing***
g. ~~Biodigester~~ for control of odor, natural occurring bacteria and automatic dosing equipment to provide continuous cleaning of system wetted components
h. Treated water storage and supply tank
i. Secondary containment sump and sump pump

j. Remote Equipment Module(s) (REM) with hoses for high-pressure washing/rinsing located at the wash pad
k. Soap/foam application equipment for cleaning
l. Sludge suction unit w/25 ft. hose and nozzle cleaner and 2 wheel sludge containers
m. Sump pumps for water flow control
n. Air compressor to satisfy systems requirements
o. Plumbing, lighting and electrical fixtures
p. HVAC System
q. Automatic Ventilation
r. Utility sink
s. Manuals and spares cabinet
t. Aluminum access and stowage ramp

2.7.1.15 Equipment Mounting

All equipment, plumbing fixtures, piping, and electrical switches, receptacles, junction boxes and conduit installed within the environmentally controlled equipment enclosure shall be securely fastened to the floor, ceiling and/or walls; in such a way that there are no obstacles that could cause personnel injury or interfere with operations, maintenance and storage of Remote Equipment Module(s) (REM) units. All fasteners shall be 316 stainless steel. In addition, removal plumbing fixtures, electrical switches, outlets and junction boxes shall be easily and safely accessible without removing other installed equipment or reaching around or though equipment enclosures.

2.7.1.16 Stowage

A storage rack will be located on one wall inside the environmentally controlled equipment enclosure to provide space for operation and maintenance manuals for each item of equipment installed. Adequate space shall be provided to allow access to each piece of equipment for maintenance and operation, and to store the necessary chemicals and system spares provided under this section. Also provide sufficient room and anchoring capability for two Remote Equipment Module (REM) units, enclosure ramps, and all power cords and hoses.

2.7.1.17 Aluminum Access/Stowage Ramp

An aluminum ramp shall be supplied to facilitate personnel entry and exit from the environmentally controlled equipment enclosure. Ramp shall be diamond plate construction and fabricated to approximately 24 inch wide, sloped to a 1:12 pitch, and include 3 inch high by 1-inch wide side rails. This ramp shall also be used for loading and unloading the Portable Turbine Engine Washing System for storage. The environmentally controlled equipment enclosure shall include facilities for storage of this ramp during transport.

2.7.1.18 Operation and Maintenance (O&M) Manuals

One (1) original and Four (4) copies of operating and maintenance manuals shall be provided for the portable water treatment/recycling vehicle wash system and Remote Equipment Module(s) (REM) system equipment portable wash pad and all supplied appurtenances. Each set to include operating instructions, description of routine and situational preventive maintenance

and repair information. The manuals will also include all major component documents for operation, components with their model number, manufacturers name, serial number and all motor nameplate data.

2.7.1.19 Operation Placards

Information and direction placards will be located above or on each piece of installed equipment to provide device identification, operator instructions reference and warnings where applicable. Placards shall also be provided showing correct valve positions for each mode of process operation, the flow it is controlling, and shall be located near each valve it describes.

2.7.2 Submersible Sump Pumps

To be determined by contractor and equipment supplier according to lift and distance(s) required by job site.

2.7.2.1 General

Provide two (2) submersible sump pumps for installation in the secondary solids collection pit to provide wastewater for recycling/pre-treatment, one gutter flushing system pump and one (1) submersible sump pump for installation in the secondary containment sump in the environmentally controlled equipment enclosure. Pumps shall be factory installed and tested for operation under water. Pumps shall be complete with cast-iron casing, bronze impeller, stainless steel shaft, sealed heavy-duty ball bearings, water-cooled hermetically sealed motor, built-in automatic reset thermal protection, float switches and waterproof three-conductor cables and grounding plugs. Provide high water alarm and check valve. Pumps shall be capable of pumping 25 gpm at 25 feet of total dynamic head.

2.7.1.17 High-Pressure Hot Water Wash Equipment

(High Pressure Hot Water Wash Equipment Continued)

2.7.3.1.1 General

Provide ~~two (1)~~ high-pressure hot water ~~Multiblaster~~ wash water generating systems for dispensing high pressure treated recycled wash water to the Remote Equipment Module(s) (REM) units at the wash pad. ~~Multiblaster~~***The*** system ***will be*** capable of 10 to 40 GPM at 3000 psi, located in the self-contained equipment enclosure. The ~~Multiblaster~~ system consists of a quad pumping *and heating module system for redundancy* ***or four (4) individual modules***. At each remote station location (REM), hose reels will be supplied with, gun and variable pressure wand. This system will be supplied by recycled water. This
The recycled wash water generating units shall be skid-mounted stationary high-pressure hot water washing systems installed in the environmentally controlled equipment enclosure.

2.7.3.2 Features

The ~~Multiblaster~~ high-pressure hot water recycled wash water generating system shall have the following features as a minimum:

a. (4) @ 20 HP, 230 Volt, 3-Phase electric motor-driven ceramic triplex positive-displacement pump, bronze and stainless steel fluid ends
b. (4) @ 900,000 BTU burner system electronics ignition, forced air with fuel solenoid control and pressure, flow and high temperature limit switches
c. Inlet water filter
d. Stainless steel: coil wrapper, float tank, covers, panels, enclosures, control panel
e. Stainless steel waterproof electrical enclosure
f. Variable pressure controlled at the Remote Equipment Module(s) (REM) wand (0 to 3,000 psi)
g. Electric motor protection safeguards system from phase loss, imbalance and reversal, overload and ground fault
h. Diagnostic LED panel indicators
i. Solid construction of welded structural steel
j. Discharge soap injection; systems which allow chemicals to pass through pump or heating coil are not acceptable
k. Non-corrosive float tank
l. Magnetic motor starter
m. Low water shut down
n. Trigger gun control at the portable Remote Equipment Module(s) (REM) units
o. Programmable- system inactivity shut down timer

2.7.3.1.2 Related Appurtenances

a. Air Compressor: 5 HP, 230 VAC, 60 gallon vertical tank, to supply100-psi compressed air to portable Remote Equipment Module(s) (REM) systems at wash pad
b. Wall mounted air make-up heater, sized for two recycled wash water generating units in continuous operation.

2.7.4 Wash Wastewater Management System

2.7.4.1 General

Provide a complete wash wastewater management system utilizing pre-treatment, oil/water separation, multi-media filtration and polishing. The process filtration/polishing system shall remove particulates in the wash water down to ~~one (1) micron~~***twenty (20) micron*** and shall remove hydrocarbons, ~~trace quantities of solvents, heavy metals in particulate form, as well as, separate all types of oils from the water~~. Specifically, the wash wastewater management process and treatment/recycle system shall produce a treated effluent for wash water recycle or discharge to the sanitary sewer, which consistently meets Federal, State and local pollutant concentration limitations.

2.7.4.2.1 Continuous Media Automatic Pre-Filtration Unit

Provide two (2) continuous media automatic pre-filtration units with vacuum assist to remove particulate solids down to 5 microns nominal at wash water feed flow rate up to 25 gpm. The filter media shall consist of a 100-yard roll of 5-micron filter media. The unit shall have stainless steel

construction; automatic filter media advance; cascade electrical float controls (input to the continuous media automatic filtration unit shall be controlled by a fluid level controlled switched outlet on the unit); vacuum assisted media bed with integrated alternating system; solids/liquid separator vessel and auto discharge to the subsequent primary filtration unit; integral spent filter media collection tray; and be factory assembled and tested. A lightweight removable, see-through cover shall be included and installed to capture water spray and provide visual observation of the process.

2.7.4.3 Polishing Filtration/Recycle System

Provide one (1) filtration/polishing recycle system to remove particulate solids down to less than ~~1~~***20***-micron nominal and free oil levels down to less than 10 ppm, at a wash wastewater feed flow rate of minimum 50 gpm. The filtration/polishing system shall consist of four complete modules; 1) 500-gallon cone bottom solids quieting/settling system; 2) 500 gallon cone bottom oil coalescing and skimming system; 3) 500 gallon cone bottom polishing loop for solids and hydrocarbon removal; and 4) a 500 gallon cone bottom polishing loop for metals removal, all as described hereinafter.

Description Of Operation:

As effluent liquid from the continuous media automatic pre-filtration unit enters the filtration/polishing recycle system, it is slowed down to allow for solids to fall to the bottom of the coalescing tank and oil/water separation to commence. Free-floating oils are carried by gravity through 420,000 square inches of oil coalescing (oilephillic) plates. These plates, which are slanted at 15 degrees and constructed of high impact polycarbonate, allow for oils to coalesce whereby they float to the surface and are mechanically skimmed from the water. An oil belt skimmer (with oil/water decanter) shall collect the coalesced oils and discharge to a contractor provided five-gallon plastic storage bucket or similar containment.

(Description Of Operation Continued)

Virtually oil free liquid then flows to a multi-media polishing loop, which can reduce light and emulsified hydrocarbons and/or suspended solids to less than ~~1~~***20-*** micron. The wash wastewater then flows by gravity to a second polishing loop for metals reduction. Both polishing loops have re-circulation flow rates at 130 gpm assuring multiple passes through the media. The entire process optimizes water quality for recycling, or direct discharge to an approved sanitary sewer.

Features:

The polishing filtration/recycle system shall have the following features as a minimum:

a. Overflow protection
b. Self-cleaning polypropylene tanks with sludge purging valves
c. Gravity flow through design
d. Primary solids inclined tank
e. 420,000 square inches of oil coalescing plates
f. Oil belt skimmer with oil/water decanter

g. Polishing loop for fine solids removal or additional hydrocarbon removal
h. Polishing loop for metals reduction
i. Automatic backflushing controlled by both seven day programmable timer and on-demand pressure sensitive systems
j. ~~Biodigester~~ auto dosing system for odor control
k. 7-day programmable timer with sleep mode operation, which continues low speed/low power circulation and wastewater processing within the treatment system during non-wash periods
l. Controlled discharge to sanitary sewer, overflow to wash pad via backflush/return line
m. Automatic notification warning light when filter bed backflushing is required
n. Factory assembled and tested
o. Electrical requirement: 230 volt, 3-phase, 4-wire
p. 500 gallon filtered storage tank of polypropylene
q. All piping, fittings, tubing, valves and controls for providing a treated recycle water-sampling line off the polishing loops prior to pumping to the filtered water storage tank. The sampling line shall be installed in the environmentally controlled equipment enclosure as shown on the drawings.
r. All piping, fittings, tubing, valves, controls and fasteners for mounting of the polishing filtration/recycle system in the environmentally controlled equipment enclosure and connection to others components of the process.

2.7.4.2.2 Provide ~~Biodigesters~~ biological odor control.

~~The Biodigesters~~ ***It*** shall be microencapsulated targeted bacteria, lab grade purified enzymes, micro and macronutrients. ~~Biodigesters~~***It*** shall be FDA and GRAS listed as safe. ~~Biodigesters~~***It*** shall be in a stabilized liquid form with a minimum cell count of 450,0~~00~~,000,000 (billon) cells per gallon with a guaranteed cell count for one year. ~~Biodigesters~~ ***It***shall be guaranteed parthenogen free.

(~~Biodigesters~~ Continued)

Provide Ultra dosing system with low voltage power supply, seven day timer with up to 11 events per day, battery backup, peristaltic pumping system, water tight enclosure and proven installations in this application.

2.7.5 Wash Water Remote Equipment Module(s) (REMS)

2.7.5.1 General

Provide four (4) complete Remote Equipment Modules complete with soap/foam application systems, retractable and self wind hose reels, all hoses, hangers and variable pressure trigger wands for cleaning compound application, high-pressure how water wash/rinse capability at the portable modular wash pad system.

2.7.5.2 Remote Equipment Module(s) (REM)

Each Remote Equipment Module (REM) shall be complete with a NEMA 4X electrical off/on control switch, a retractable hose reel with 50 feet of low-pressure hose with trigger wand, a self wind hose reel with 50 feet of high-pressure hose with dual trigger wand, and a 1-gpm at 60-psi pneumatic soap pump module with foam injection valve capability.

Each Remote Equipment Module (REM) cleaning compound delivery module shall contain a pneumatic pump, which operates on nominal 100-psi compressed air. The pump shall have an oil/water filter separator on the inlet side to protect the pump from contamination. Each module shall incorporate two (2) regulator valves; one (1) for controlling the air to the pump for cleaning compound delivery and one (1) for providing the air to the wand injector for foam production.

All equipment shall be mounted on a structural steel stand with a square base incorporating mount down holes all four corners. Color shall be manufacturers standard. Each unit shall contain a nameplate with the model number, serial number and manufacturers name and address.

2.7.5.4 Trigger Gun Wands

Four (4) Trigger Gun Wands shall be provided for each Portable Remote Equipment Module (REM) unit.

a. The high-pressure hot water dual wand shall have a lateral rotating variable pressure control for easy adjustment of high-pressure hot water output. Rotation of this control with one hand will vary the output pressure from 0 to 3,000 psig at the nozzle.

b. The cleaning compound delivery wand shall have an air injector assembly at the wand inlet to produce foam at that point. The adjustment of air into the cleaning compound through this injector shall be designed to vary the thickness or dryness of the delivered foam.

2.7.5.5 Hoses

The following hose systems shall be provided:

a. High Pressure Hose: 50 feet of 3/8-inch diameter wire wound high pressure hose, rated at a minimum of 4,500 psig, with a quick disconnect on the delivery end to match wand quick disconnect.

b. Low Pressure Hose: 50 feet of 3/8-inch diameter hose with fixed connections on both ends.

c. Low Pressure Hose: (Length per application) 1" diameter for wash wastewater transport to wastewater management system and wastewater management system to wash pad return.

d. Low Pressure Hose: 50 feet on 1" diameter for de-mucking system from stubbed up connection on island(s) to gun.

2.7.5.6 Remote Equipment Module (REM) Tactical Connections

Each Remote Equipment Module (REM) shall be equipped with suitable flexible hose and wiring with quick disconnects or coupling devices for proper with the interconnect piping to the environmentally controlled equipment enclosure tactical hub. This includes connections for the following:

a. High-pressure hot water wash/rinse hose

b. Compressed air hose

c. 24 volt, 6-wire for remote controls

2.7.5.7 Instruments and Controls

The main off/on control switch for each Portable Remote Equipment Module (REM) unit shall be lighted in the "on" position, and shall be rated NEMA 4X, watertight and dust tight. Each Portable Remote Equipment Module (REM) shall include pump pressure gauge, an incoming air pressure gauge, air pressure regulator and instructions permanently affixed.

High-volume De-mucking system

2.5.7.8 General

Provide De-mucking system. 120 gallon per minute at 200 psi High Volume ~~Multiblaster~~ pumping system feeding four hose and gun systems located at each (REM) location each capable of delivering 30 GPM. ~~The Multiblaster~~***It*** remotes will be located around the wash bays for complete coverage of the vehicle. High Volume Multiblaster system consists of (4) power units providing redundancy. Each power module within the system adds to the total water volume available within the system on demand and can supply any one of (4) wash stations. Up to (4) ~~Multiblaster~~ stations can be operated at any given time. A total of (4) ~~Multiblaster~~ stations shall be capable of operating simultaneously at full rated capacity.

(High-volume De-mucking System Continued)

A remote control station will be furnished at each ~~Multiblaster~~ station to allow the operator to actuate the system for that ~~Multiblaster~~ station. Recycled water at a rate of 120 gallons per minute will be used to supply this system. The ~~Multiblaster~~ system consists of a quad pumping module system for redundancy.

Features

The ~~Multiblaster~~ high volume de-mucking system recycled wash water generating system shall have the following features as a minimum on each:

p. (4) 7.5 HP, 460 Volt, 3-Phase electric motor-driven pumps
q. Inlet water filter
r. NEMA 4x waterproof electrical enclosure
s. Variable pressure and pattern controlled at the Remote Equipment Module(s) (REM)
t. Electric motor protection against overload
u. Solid construction of welded structural steel
v. (4) Non-corrosive ~~500~~ ***1,000*** gallon water supply tank ***with stand and fittings***
w. Magnetic motor starter
x. Programmable- system inactivity shut down timer

2.7.6 Turbine Engine Washing System (TEWS)

Provide Diesel engine driven portable turbine engine washing system. Totally self-contained for a one-man operation, the TEWS must have both water and chemical tanks. The TEWS must be a cleaning system designed specifically for a tech order mandated task (21-T700-6). There must be enough fluid available in the TEWS to clean and wash two engines with enough left over to rinse the gas path cleaner from the outside of the vehicle. The TEWS system shall include both probes required for turbine engine cleaning.

The TEWS shall be stored within the self contained equipment enclosure. The TEWS shall be no more than 18-1/2 inches wide. The height to the top of the water tank lids shall be no more than 41 inches. The unit shall not weigh in excess of 280 pounds and can be airlifted by helicopter. The TEWS shall have eight inch hard rubber casters fixed on the front and swivel on the rear. Both rear wheels have a foot-actuated brake.

2.7.7 Inspection, Startup And Training

A qualified technician shall provide final site installation inspection and complete utility stub connections to the environmentally controlled equipment enclosure. Following final system connections, the technician shall provide two (2) days startup and operational training for site personnel. This will include system operation and routine equipment maintenance considerations. The Contracting Officer or his representative shall be present during this training for system signoff completion

2.7.7 Wash Pad Sump Cleaning System

The Portable Wash Pad System shall include a sump-cleaning device for solids removal from the collection sump at the wash pad. This device shall work in compliment with and functions in combination with the high-pressure wash/rinse system. Using suction power acquired from an eductor attachment to the high-pressure wash/rinse nozzle, solids are removed and pumped to a provided sludge collection cart for final dewatering and disposal.

2.7.8 Spare Parts/Equipment

The following items are anticipated as required spares and shall be included as part of the Portable High-Pressure Hot Water Wash/Rinse And Wash Wastewater Management System.

a. Two (2) Rolls of filter media for pre-treatment solids filter

b. One (1) Box of spare fuses containing two (2) of each type fuse used

c. One (1) Box of spare bulbs containing two (2) of each type bulb used

d. One (1) Belt for oil skimmer

e. Two (2) Nozzles for high-pressure wash rinse wands

f. Fifty (300) Pounds media for fist polishing loop

g. Fifty (300) Pounds media for second polishing loop

h. One (1) 55 Gallon drum of cleaning compound

PART 3 EXECUTION

3.1.1 INSTALLATION

Installation of plumbing and electrical systems including fixtures, equipment, materials, and workmanship shall be in accordance with the Plumbing and Electrical Codes, except as modified herein. When fixtures require both hot and cold water supplies, provide the hot water supply to the left of the cold water supply. Plastic piping shall not penetrate firewalls or fire floors and shall be used on one side of the firewalls and fire floors not closer than six (6) inches to the penetration.

3.1.1 Threaded Connections

Jointing compound for pipe threads shall be polytetrafluoreoethylene (PTFE) pipe thread paste, pipe cement and oil, or PTFE powder and oil; apply only on male threads. Provide exposed ferrous pipe threads with one coat of primer applied to a minimum dry film thickness of 1.0 mil.

3.1.2 Solder End Valves and Joints

Remove stems, washers and other items subject to damage by heat during installation. Reassemble valve after soldering is completed. Valves without heat sensitive parts do not require disassembly but shall be opened at least two turns during soldering. All soldered pipe joints shall be professional and clean.

3.1.3 Pipe Supports (Hangers)

Provide additional supports at the concentrated loads in piping between supports, such as for inline water pumps and flanged valves.

3.2 NAMEPLATES

Provide laminated plastic nameplates for equipment, gauges, thermometers, valves, electrical receptacles, switches and junction boxes. Stop valves in supplied to fixtures will not require nameplates. Laminated plastic nameplates shall be 0.125 inch thick melamine plastic, black with white center core. Surface shall be a matte finish and corners shall be square. Accurately align lettering and engrave into the white core. Minimum size of nameplates shall be 1.0 by 2.5 inches. Lettering shall be a minimum of 0.25 inch high normal block lettering. Key nameplates to a chart and schedule for each system. Frame charts and schedules under clear plastic and place where directed near each system. Furnish two (2) copies of each chart and schedule. Each inscription shall identify its function. Equipment nameplates shall show the following information as it relates to the item described:

a. Manufacturer, Type and Model Number

b. Contract Number and Accepted Date

c. Capacity or Size

d. System in which installed

e. System it controls

f. Circuit Breaker Number

g. Voltage

3.3 CONNECTIONS TO EXISTING WATER SERVICE AND SEWERAGE SYSTEMS

Furnish labor for making the actual connections to the existing systems as specified in Section 02510 "Water Distribution" and Section 02530 "Sanitary Sewerage".

3.4 FIELD QUALITY CONTROL

MANUFACTURER'S WARRANTY: The Contractor shall provide a minimum 2-year parts and labor manufacturer's warranty on the wash rack equipment. This warranty shall be directly from the wash rack equipment manufacturer to the Government and shall be in addition to the standard one-year warranty covering construction. The manufacturer's warranty shall provide for the repair or replacement of the wash rack equipment that become inoperative as a result of defects in material or workmanship within 2 year after the date of final acceptance. When the government determines that parts other than wear items and filter media require replacement, the manufacturer shall furnish new parts at no additional cost to the Government. Upon notification that equipment has failed under the terms of the warranty, the manufacturer of their agent (Distributor) shall respond in no more than 48 hours. Response shall mean having a manufacturer-qualified technician onsite to evaluate the extent of the needed repairs. The warranty period shall begin on the same date of building/wash rack dedication and shall continue for the full product warranty period.

The Contractor shall furnish to the Contracting Officer a bound and indexed notebook containing a complete listing of all equipment covered by a manufacturer's warranty. The equipment list shall state the duration of the warranty thereof; start date of the warranty, ending date of the warranty, location of the warranted equipment, and the point of contact for fulfillment of the warranty (not to be less then 2 years) . Point of contact shall include the name of the service representative along with the day, night, weekend, and holiday phone numbers for a service call. The completed bound and indexed notebook shall be delivered to the Contracting Office prior to final acceptance of the facility. Local Service Representative - The Contractor shall furnish with each manufacturer's warranty the name, address, and telephone number (day, night, weekend, and holiday) of the service representative nearest to the location where the equipment is installed. Upon a request for service under the warranty, the service representative shall honor the warranty during the warranty period, and shall provide the services prescribed by the terms of the warranty. Equipment Warranty Tags - At the time of installation, each item of manufacturer's warranted equipment shall be tagged with a durable, oil- and water-resistant tag, suitable for interior and exterior locations, resistant to solvents, abrasion, and fading due to sunlight. The tag shall be attached with copper wire or a permanent, pressure-sensitive, adhesive backing. The tag shall be installed in an easily noticed location attached to the warranted equipment. The tag for this equipment shall be similar to the following in format, and shall contain all of the listed information:

MANUFACTURER'S WARRANTY EQUIPMENT TAG
Equipment/Product Covered: _____
Manufacturer:_____Model No.:_____Serial No.:__Warranty Period: From _____to _____ Contract No.: _____
Warranty Contact: _____
Name: _____
Address: _____
Telephone: _____

SUBMITTALS Submit the foregoing in accordance with Section 01330, "Submittal Procedures". A variance to the drawings & specification will be considered subject to approved by Engineering and the Environmental Section at Fort Irwin. The variance will be accepted or rejected based on the treated recycle effluent meeting the specified pollutant concentrations indicated in the specification.

3.4.1 Inspections

Prior to initial operation, inspect piping system for compliance with drawings, specifications, and manufacturer's submittals.

3.4.2 Field Testing

Before final acceptance of the work, test each system as in service to demonstrate compliance with the contract requirements. Perform the following tests in addition to the tests specified in the Plumbing Code, except as modified herein. Correct defects in the work provided by the Contractor, and repeat tests until work is in compliance with the contract requirements. Furnish water, electricity, instruments, connecting devices, and personnel for performing tests. Manufacturer will supply qualified technician for two (2) eight (8) hour days specifically to start-up and test all equipment in the presence of the Contracting Officer or there representative.

3.4.2.1 Domestic Water Piping

Before applying insulation, hydrostatically test each piping system at not less than 100-psig system working pressure with no leakage or reduction in gauge pressure for two (2) hours.

3.4.2.2 High-Pressure Hot Water Wash/Rinse Piping

Hydrostatically test each piping system at not less that the rated capacity of the piping system with no leakage or reduction of gauge pressure for two (2) hours.

3.4.2.3 Compressed Air Piping

Hydrostatically test each piping system at not less that the rated capacity of the piping system with no leakage or reduction of gauge pressure for two (2) hours.

3.4.2.4 DWV Piping

Before installation of fixtures, cap ends of each system, fill piping with water to the roof and allow to stand until a thorough inspection has been made. If the system is tested in sections, each opening shall be plugged and each section tested with not less than a 10-foot head of water. After plumbing fixtures have been set and their traps filled with water, subject

the entire sanitary system to a final air pressure test of not more than 1.0-inch of water column and a smoke or peppermint test. Perform the air and smoke test with an approved smoke testing machine, which shall show a clear passage of smoke and air throughout the entire system. The entire system shall be proven absolutely tight under such test.

3.4.2.5 Backflow Preventers Test Report

Backflow preventers shall be tested by a locally approved and certified backflow assembly tester. A copy of the test report shall be provided to the Contracting Officer prior to placing the domestic water system into operation, or no later than five (5) days after the test.

3.4.2.6 Clean Up

After all equipment testing and personnel training has been completed, all surface areas and containment area floor shall be cleaned of all dirt, debris and water.

3.5 DISINFECTION OF POTABLE WATER PIPING

Disinfect new water piping and existing water piping affected by contractor's operations in accordance with AWWA C651. Fill piping systems with solution containing minimum of 50-ppm of available chlorine and allow solution to stand for minimum of 24 hours. Flush solution from the systems with domestic water until maximum residual chlorine content is within the range of 0.2 to 0.5-ppm, or the residual chlorine content of the domestic water supply. Obtain at least two consecutive satisfactory bacteriological samples from new water piping, analyze by a certified laboratory, and submit the results prior to the new water piping being placed into service. Disinfection of systems supplied by non-potable water is not required.

-- End of Section --